

POSTER PRESENTATION

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Assessment of 1p/19q deletion by Fluorescence In situ Hybridization (FISH) in Glioma Patients from Andhrapradesh

Eppa Kavitha^{1*}, Iravathy Goud¹, Swarna Latha², Meenakshi Swain², Michelle De Paude², Tejal Modi², Anuradha², Ravi V¹, Sakina Aneeb¹, Adi Maha Lakshmi M¹, Vijayanand Reddy P³

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Background

Oligodendroglial tumors represent approximately 4-7% of all gliomas, however, in some series the incidence has been reported to be as high as 10-20% due to improved histological appreciation and recently recognized molecular signatures. The discovery of 1p and 19q chromosomal arms deletion in glial tumors influences both more objective diagnosis and more accurate prediction of chemotherapy response. As a result an attempt has been made to detect deletion using fluorescence in-situ hybridization (FISH) and to determine its prognostic value in a cohort of glial tumor patients from Andhra Pradesh.

Materials and Methods

FISH was performed on 66 FFPE tissue sections by using Vyis LSI 1p36/LSI 1q25 and LSI 19p13/LSI 19q13 dual coloured FISH probe sets. Signals were scored from at least 150-250 non-overlapping, intact nuclei.

Results

Simultaneous occurrence of both 1p and 19q deletions was observed in (21/35) 60% of oligodendrogliomas which included (8/21) 38% of grade II and (13/21) 61.9% of grade III. Isolated 19q deletion was seen in (1/21) 4.76% & lone 1p loss was not observed in oligodendrogliomas. In Mixed Oligoastrocytomas combined 1p/19q loss was observed in (7/16) 43.75% cases, including one grade II and 6 grade III tumors and 1/16 (6.25%) showed isolated 1p loss & 19q

deletion. This disorder was not observed in astrocytomas. The oligodendroglial phenotype was found to be significantly associated with a loss of 1p ($P < 0.05$), a loss of 19q ($P < 0.05$) and a combined loss of 1p and 19q ($P < 0.05$). Frontal location of a tumor occurred to be a statistically significant factor unfavourable for prognosis, $p < 0.05$.

Conclusion

In the work presented the FISH was successfully applied to identify deletion 1p/19q. Its incidence depends on the type of diagnosed glioma. Deletions also have prognostic significance in the test group what constitutes the basis for inclusion of determining deletion 1p/19q into diagnostic and treatment algorithm in gliomas.

Authors' details

¹Molecular Biology and Cytogenetics Department, Apollo Health City Building, Apollo Hospitals, Jubilee Hills, Hyderabad, India. ²Department of Histopathology, Apollo Hospitals, Jubilee Hills, Hyderabad, India. ³Department of Oncology, Apollo Hospitals, Jubilee Hills, Hyderabad, India.

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* Correspondence: matamkavitha@gmail.com

¹Molecular Biology and Cytogenetics Department, Apollo Health City Building, Apollo Hospitals, Jubilee Hills, Hyderabad, India

Full list of author information is available at the end of the article